

SEQUENCE LISTING

<110> Adler, David A.
 Holloway, James L.
 Baindur, Nand
 Beigel-Orme, Stephanie
 Sheppard, Paul O.

<120> NOVEL BETA-DEFENSINS

<130> 97-44C1

<150> 60/058,335

<151> 1997-10-09

<150> 60/064,294

<151> 1997-11-05

<150> 09/150,786

<151> 1998-09-10

<160> 72

<170> FastSEQ for Windows Version 3.0

<210> 1

<211> 219

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)...(195)

<400> 1

atg	agg	atc	cat	tat	ctt	ctg	ttt	gct	ttg	ctc	ttc	ctg	ttt	ttg	gtg	48
Met	Arg	Ile	His	Tyr	Leu	Leu	Phe	Ala	Leu	Leu	Phe	Leu	Phe	Leu	Val	
1			5				10					15				

cct	gtt	cca	ggt	cat	gga	gga	atc	ata	aac	aca	tta	cag	aaa	tat	tat	96
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	----

Pro Val Pro Gly His Gly Gly Ile Ile Asn Thr Leu Gln Lys Tyr Tyr
 20 25 30

tgc aga gtc aga ggc ggc cgg tgt gct gtg ctc agc tgc ctt cca aag 144
 Cys Arg Val Arg Gly Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys
 35 40 45

gag gaa cag atc ggc aag tgc tcg acg cgt ggc cga aaa tgc tgc cga 192
 Glu Glu Gln Ile Gly Lys Cys Ser Thr Arg Gly Arg Lys Cys Cys Arg
 50 55 60

aga aagaaataaa aaccctgaaa catg 219
 Arg
 65

<210> 2

<211> 65

<212> PRT

<213> Homo sapiens

<400> 2

Met Arg Ile His Tyr Leu Leu Phe Ala Leu Leu Phe Leu Phe Leu Val
 1 5 10 15

Pro Val Pro Gly His Gly Gly Ile Ile Asn Thr Leu Gln Lys Tyr Tyr
 20 25 30

Cys Arg Val Arg Gly Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys
 35 40 45

Glu Glu Gln Ile Gly Lys Cys Ser Thr Arg Gly Arg Lys Cys Cys Arg
 50 55 60

Arg
 65

<210> 3

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Cysteine motif of the Beta-defensin family

<221> VARIANT

<222> (2)...(7)

<223> Xaa2 is independently any amino acid residue.

preferably not cysteine.

Xaa3 is independently any amino acid residue,
preferably not cysteine.

Xaa4 is independently any amino acid residue,
preferably not cysteine.

Xaa5 is independently any amino acid residue,
preferably not cysteine.

Xaa6 is independently any amino acid residue,
preferably not cysteine.

Xaa7 is independently any amino acid residue,
preferably not cysteine.

<221> VARIANT

<222> (9)...(12)

<223> Xaa9 is independently any amino acid residue,
preferably not cysteine.

Xaa10 is independently any amino acid residue,
preferably not cysteine.

Xaa11 is independently any amino acid residue,
preferably not cysteine.

Xaa12 is independently any amino acid residue,
preferably not cysteine.

<221> VARIANT

<222> (14)...(20)

<223> Xaa14 is independently any amino acid residue,
preferably not cysteine.

Xaa15 is independently any amino acid residue,
preferably not cysteine.

Xaa16 is independently any amino acid residue,
preferably not cysteine.

Xaa17 is independently any amino acid residue,
preferably not cysteine.

Xaa18 is independently any amino acid residue,
preferably not cysteine.

Xaa19 is independently any amino acid residue,
preferably not cysteine.

Xaa20 is independently any amino acid residue,
preferably not cysteine.

<221> VARIANT

<222> (22)...(22)

<223> Xaa is any amino acid residue, preferably not

1009116.030500

cysteine

<221> VARIANT

<222> (24)...(29)

<223> Xaa24 is independently any amino acid residue,
preferably not cysteine.

Xaa25 is independently any amino acid residue,
preferably not cysteine.

Xaa26 is independently any amino acid residue,
preferably not cysteine.

Xaa27 is independently any amino acid residue,
preferably not cysteine.

Xaa28 is independently any amino acid residue,
preferably not cysteine.

Xaa29 is independently any amino acid residue,
preferably not cysteine.

<400> 3

Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa
1				5				10					15		
Xaa	Xaa	Xaa	Xaa	Gly	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Cys	Cys	
			20				25						30		

<210> 4

<211> 213

<212> DNA

<213> Artificial Sequence

<220>

<223> Degenerate nucleotide encoding the polypeptide of
SEQ ID NO:2

<221> variation

<222> (1)...(213)

<223> Nucleotides 12, 15, 21, 24, 27, 33, 39, 42, 45,
48, 51, 54, 60, 63, 75, 78, 98, 99, 100, 106, 109,
112, 115, 118, 121, 127, 130, 133, 136, 142, 145,
163, 172, 175, 178, 181, 184, 196, and 199 are
each independently A, T, G or C.

<400> 4

athcaytay	tnytnttygc	nytnytntty	ytnttytng	tnccngtncc	nggncayggn	60
ggnathatha	ayacnytnca	raartrrnnn	tgymngntnm	gngngngnmg	ntgygcngtn	120

ytnwsntggy tncnaarga rgarcarath ggnaartgyw snacnmngg nmgnaartgy 180
 tgygmngna araartrraa rccntrraay atg 213

<210> 5
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide ZC14741

<400> 5
 gagcacttgc cgatctgttc 20

<210> 6
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide ZC14740

<400> 6
 ccaggatcatg gaggaatcat 20

<210> 7
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide ZC14780

<400> 7
 ggaggaatca taaacaca 18

<210> 8
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide ZC14776

<400> 8
gccgatctgt tcctcctt

18

<210> 9
<211> 438
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (220)...(420)

<400> 9
acaaatccat agggagctct gccttaccat tgggttccta attaaactgag tgagtgggtg 60
tgttctgcat ggtgagaggc attggaatga tgcatacagaa aacatgtcat aatgtcatca 120
ctgtaatatg acaagaattg cagctgtggc tggaaccttt ataaagtac caagcacacc 180
ttttcatcca gtctcagcgt ggggtgaagc ctagcagct atg agg atc cat tat 234
Met Arg Ile His Tyr
1 5
ctt ctg ttt gct ttg ctc ttc ctg ttt ttg gtg cct gtt cca ggt cat 282
Leu Leu Phe Ala Leu Leu Phe Leu Phe Leu Val Pro Val Pro Gly His
10 15 20
gga gga atc ata aac aca tta cag aaa tat tat tgc aga gtc aga ggc 330
Gly Gly Ile Ile Asn Thr Leu Gln Lys Tyr Tyr Cys Arg Val Arg Gly
25 30 35
ggc cgg tgt gct gtg ctc agc tgc ctt cca aag gag gaa cag atc ggc 378
Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Gln Ile Gly
40 45 50
aag tgc tcg acg cgt ggc cga aaa tgc tgc cga aga aag aaa 420
Lys Cys Ser Thr Arg Gly Arg Lys Cys Cys Arg Arg Lys Lys
55 60 65
taaaaaccct gaaacatg 438

<210> 10
<211> 67
<212> PRT
<213> Homo sapiens

<400> 10

Met	Arg	Ile	His	Tyr	Leu	Leu	Phe	Ala	Leu	Leu	Phe	Leu	Phe	Leu	Val
1				5					10					15	
Pro	Val	Pro	Gly	His	Gly	Gly	Ile	Ile	Asn	Thr	Leu	Gln	Lys	Tyr	Tyr
			20					25					30		
Cys	Arg	Val	Arg	Gly	Gly	Arg	Cys	Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys
		35					40					45			
Glu	Glu	Gln	Ile	Gly	Lys	Cys	Ser	Thr	Arg	Gly	Arg	Lys	Cys	Cys	Arg
	50					55					60				
Arg	Lys	Lys													
65															

<210> 11

<211> 219

<212> DNA

<213> Artificial Sequence

<220>

<223> Degenerate nucleotide sequence encoding the polypeptide of SEQ ID NO:10

<221> variation

<222> (1)...(219)

<223> Nucleotides 6, 18, 21, 27, 30, 33, 39, 45, 48, 51, 54, 57, 60, 66, 69, 81, 84, 94, 95, 96, 102, 105, 108, 111, 114, 117, 123, 126, 129, 132, 138, 141, 159, 168, 171, 174, 177, 180, 192, 195, and 210 are each independently A, T, C, or G.

<400> 11

atgmgathc	aytaytnyt	nttygcnytn	ytnttytnt	tytngtncc	ngtnccnggn	60
cayggnggna	thathaayac	nytnccaraar	trrrnntgym	gngtnmgngg	nggnmgntgy	120
gcngtntnw	sntggytncc	naargargar	carathggna	artgywsnac	nmgnggnmgn	180
aartgytgym	gnmgnaaraa	rtrraarccn	trraayatg			219

<210> 12

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Oligonucleotide ZC15591

<400> 12
tgccgatctg ttcctccttt g

21

<210> 13
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide ZC15589

<400> 13
gaacaggcac caaaaacagg aagag

25

<210> 14
<211> 37
<212> PRT
<213> Artificial Sequence

<220>
<223> Defensin polypeptide

<400> 14
Gln Lys Tyr Tyr Cys Arg Val Arg Tyr Tyr Arg Cys Ala Val Leu Ser
1 5 10 15
Cys Leu Pro Lys Glu Glu Gln Ile Tyr Lys Cys Ser Thr Arg Tyr Arg
20 25 30
Lys Cys Cys Arg Arg
35

<210> 15
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Defensin polypeptide

<221> VARIANT
<222> (26)...(26)
<223> Xaa is Leu, Ile, Val, Phe or Met.

<400> 15

Gly	Arg	Cys	Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu	Cys	Ile	Gly
1				5				10						15	
Lys	Met	Ser	Thr	Arg	Gly	Arg	Lys	Cys	Xaa	Arg	Arg	Lys			
			20				25								

<210> 16

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (26)...(26)

<223> Xaa is Leu, Ile, Val, Phe or Met.

<400> 16

Gly	Arg	Cys	Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu	Cys	Ile	Gly
1				5				10						15	
Lys	Met	Ser	Thr	Arg	Gly	Arg	Lys	Cys	Xaa	Arg	Arg	Lys	Lys		
			20				25					30			

<210> 17

<211> 27

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (26)...(26)

<223> Xaa is Leu, Ile, Val, Phe or Met.

<400> 17

Gly	Arg	Cys	Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu	Cys	Ile	Gly
1				5				10						15	
Lys	Met	Ser	Thr	Arg	Gly	Arg	Lys	Cys	Xaa	Arg					
			20				25								

<210> 18
 <211> 38
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Defensin polypeptide

<400> 18

Gln Lys Tyr Tyr Cys Arg Val Arg Tyr Tyr Arg Cys Ala Val Leu Ser
 1 5 10 15
 Cys Leu Pro Lys Glu Glu Gln Ile Tyr Lys Cys Ser Thr Arg Tyr Arg
 20 25 30
 Lys Cys Cys Arg Arg Lys
 35

<210> 19
 <211> 39
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Defensin polypeptide

<400> 19

Gln Lys Tyr Tyr Cys Arg Val Arg Tyr Tyr Arg Cys Ala Val Leu Ser
 1 5 10 15
 Cys Leu Pro Lys Glu Glu Gln Ile Tyr Lys Cys Ser Thr Arg Tyr Arg
 20 25 30
 Lys Cys Cys Arg Arg Lys Lys
 35

<210> 20
 <211> 44
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Defensin Polypeptide

<400> 20

Ile Ile Asn Thr Leu Gln Lys Tyr Tyr Cys Arg Val Arg Tyr Tyr Arg
 1 5 10 15

Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Gln Ile Tyr Lys Cys
 20 25 30
 Ser Thr Arg Tyr Arg Lys Cys Cys Arg Arg Lys Lys
 35 40

<210> 21

<211> 43

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<400> 21

Ile Ile Asn Thr Leu Gln Lys Tyr Tyr Cys Arg Val Arg Tyr Tyr Arg
 1 5 10 15
 Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Gln Ile Tyr Lys Cys
 20 25 30
 Ser Thr Arg Tyr Arg Lys Cys Cys Arg Arg Lys
 35 40

<210> 22

<211> 42

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<400> 22

Ile Ile Asn Thr Leu Gln Lys Tyr Tyr Cys Arg Val Arg Tyr Tyr Arg
 1 5 10 15
 Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Gln Ile Tyr Lys Cys
 20 25 30
 Ser Thr Arg Tyr Arg Lys Cys Cys Arg Arg
 35 40

<210> 23

<211> 43

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<400> 23

Ile	Asn	Thr	Leu	Gln	Lys	Tyr	Tyr	Cys	Arg	Val	Arg	Tyr	Tyr	Arg	Cys
1				5				10						15	
Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu	Gln	Ile	Tyr	Lys	Cys	Ser
		20						25					30		
Thr	Arg	Tyr	Arg	Lys	Cys	Cys	Arg	Arg	Lys	Lys					
		35					40								

<210> 24

<211> 42

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<400> 24

Ile	Asn	Thr	Leu	Gln	Lys	Tyr	Tyr	Cys	Arg	Val	Arg	Tyr	Tyr	Arg	Cys
1				5				10						15	
Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu	Gln	Ile	Tyr	Lys	Cys	Ser
		20						25					30		
Thr	Arg	Tyr	Arg	Lys	Cys	Cys	Arg	Arg	Lys						
		35					40								

<210> 25

<211> 41

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<400> 25

Ile	Asn	Thr	Leu	Gln	Lys	Tyr	Tyr	Cys	Arg	Val	Arg	Tyr	Tyr	Arg	Cys
1				5				10						15	
Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu	Gln	Ile	Tyr	Lys	Cys	Ser
		20						25					30		
Thr	Arg	Tyr	Arg	Lys	Cys	Cys	Arg	Arg							
		35					40								

<210> 26

<211> 42
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Defensin polypeptide

<400> 26
 Asn Thr Leu Gln Lys Tyr Tyr Cys Arg Val Arg Tyr Tyr Arg Cys Ala
 1 5 10 15
 Val Leu Ser Cys Leu Pro Lys Glu Glu Gln Ile Tyr Lys Cys Ser Thr
 20 25 30
 Arg Tyr Arg Lys Cys Cys Arg Arg Lys Lys
 35 40

<210> 27
 <211> 41
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Defensin polypeptide

<400> 27
 Asn Thr Leu Gln Lys Tyr Tyr Cys Arg Val Arg Tyr Tyr Arg Cys Ala
 1 5 10 15
 Val Leu Ser Cys Leu Pro Lys Glu Glu Gln Ile Tyr Lys Cys Ser Thr
 20 25 30
 Arg Tyr Arg Lys Cys Cys Arg Arg Lys
 35 40

<210> 28
 <211> 40
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Defensin polypeptide

<400> 28
 Asn Thr Leu Gln Lys Tyr Tyr Cys Arg Val Arg Tyr Tyr Arg Cys Ala
 1 5 10 15
 Val Leu Ser Cys Leu Pro Lys Glu Glu Gln Ile Tyr Lys Cys Ser Thr

Arg Tyr Arg Lys Cys Cys Arg Arg
 35 40 20 25 30

<210> 29

<211> 41

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<400> 29

Thr Leu Gln Lys Tyr Tyr Cys Arg Val Arg Tyr Tyr Arg Cys Ala Val
 1 5 10 15
 Leu Ser Cys Leu Pro Lys Glu Glu Gln Ile Tyr Lys Cys Ser Thr Arg
 20 25 30
 Tyr Arg Lys Cys Cys Arg Arg Lys Lys
 35 40

<210> 30

<211> 40

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<400> 30

Thr Leu Gln Lys Tyr Tyr Cys Arg Val Arg Tyr Tyr Arg Cys Ala Val
 1 5 10 15
 Leu Ser Cys Leu Pro Lys Glu Glu Gln Ile Tyr Lys Cys Ser Thr Arg
 20 25 30
 Tyr Arg Lys Cys Cys Arg Arg Lys Lys
 35 40

<210> 31

<211> 39

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<400> 31

Thr	Leu	Gln	Lys	Tyr	Tyr	Cys	Arg	Val	Arg	Tyr	Tyr	Arg	Cys	Ala	Val
1				5					10					15	
Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu	Gln	Ile	Tyr	Lys	Cys	Ser	Thr	Arg
			20					25					30		
Tyr	Arg	Lys	Cys	Cys	Arg	Arg									
			35												

<210> 32

<211> 40

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<400> 32

Leu	Gln	Lys	Tyr	Tyr	Cys	Arg	Val	Arg	Tyr	Tyr	Arg	Cys	Ala	Val	Leu
1				5					10					15	
Ser	Cys	Leu	Pro	Lys	Glu	Glu	Gln	Ile	Tyr	Lys	Cys	Ser	Thr	Arg	Tyr
			20					25					30		
Arg	Lys	Cys	Cys	Arg	Arg	Lys	Lys								
			35				40								

<210> 33

<211> 39

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<400> 33

Leu	Gln	Lys	Tyr	Tyr	Cys	Arg	Val	Arg	Tyr	Tyr	Arg	Cys	Ala	Val	Leu
1				5					10					15	
Ser	Cys	Leu	Pro	Lys	Glu	Glu	Gln	Ile	Tyr	Lys	Cys	Ser	Thr	Arg	Tyr
			20					25					30		
Arg	Lys	Cys	Cys	Arg	Arg	Lys									
			35												

<210> 34

<211> 38

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<400> 34

Leu	Gln	Lys	Tyr	Tyr	Cys	Arg	Val	Arg	Tyr	Tyr	Arg	Cys	Ala	Val	Leu
1				5					10					15	
Ser	Cys	Leu	Pro	Lys	Glu	Glu	Gln	Ile	Tyr	Lys	Cys	Ser	Thr	Arg	Tyr
			20					25					30		
Arg	Lys	Cys	Cys	Arg	Arg										
			35												

<210> 35

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (45)...(45)

<223> Xaa is leu, ile, val, phe, or met

<400> 35

Pro	Gly	His	Gly	Ile	Ile	Asn	Thr	Leu	Gln	Leu	Tyr	Tyr	Cys	Arg
1				5				10					15	
Val	Arg	Gly	Gly	Arg	Cys	Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu
			20					25				30		
Cys	Ile	Gly	Lys	Met	Ser	Thr	Arg	Gly	Arg	Lys	Cys	Xaa	Arg	Arg
			35				40					45		
Lys														

<210> 36

<211> 48

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (45)...(45)

<223> Xaa is leu, ile, val, phe, or met

<400> 36

Pro	Gly	His	Gly	Gly	Ile	Ile	Asn	Thr	Leu	Gln	Leu	Tyr	Tyr	Cys	Arg
1				5				10						15	
Val	Arg	Gly	Gly	Arg	Cys	Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu
		20					25				30				
Cys	Ile	Gly	Lys	Met	Ser	Thr	Arg	Gly	Arg	Lys	Cys	Xaa	Arg	Arg	Lys
		35					40					45			

<210> 37

<211> 48

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (44)...(44)

<223> Xaa is leu, ile, phe, val, or met

<400> 37

Gly	His	Gly	Gly	Ile	Ile	Asn	Thr	Leu	Gln	Leu	Tyr	Tyr	Cys	Arg	Val
1				5				10						15	
Arg	Gly	Gly	Arg	Cys	Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu	Cys
		20					25				30				
Ile	Gly	Lys	Met	Ser	Thr	Arg	Gly	Arg	Lys	Cys	Xaa	Arg	Arg	Lys	Lys
		35					40				45				

<210> 38

<211> 47

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (44)...(44)

<223> Xaa is leu, ile, val, phe, or met.

<400> 38

Gly	His	Gly	Gly	Ile	Ile	Asn	Thr	Leu	Gln	Leu	Tyr	Tyr	Cys	Arg	Val
1				5				10						15	
Arg	Gly	Gly	Arg	Cys	Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu	Cys
			20				25						30		
Ile	Gly	Lys	Met	Ser	Thr	Arg	Gly	Arg	Lys	Cys	Xaa	Arg	Arg	Lys	
		35					40					45			

<210> 39

<211> 47

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (43)...(43)

<223> Xaa is leu, ile, val, phe, or met

<400> 39

His	Gly	Gly	Ile	Ile	Asn	Thr	Leu	Gln	Leu	Tyr	Tyr	Cys	Arg	Val	Arg
1				5				10						15	
Gly	Gly	Arg	Cys	Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu	Cys	Ile
			20				25					30			
Gly	Lys	Met	Ser	Thr	Arg	Gly	Arg	Lys	Cys	Xaa	Arg	Arg	Lys	Lys	
		35					40				45				

<210> 40

<211> 46

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (43)...(43)

<223> Xaa is leu, ile, phe, val, or met

<400> 40

His Gly Gly Ile Ile Asn Thr Leu Gln Leu Tyr Tyr Cys Arg Val Arg
 1 5 10 15
 Gly Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Cys Ile
 20 25 30
 Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys
 35 40 45

<210> 41

<211> 46

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (42)...(42)

<223> Xaa is leu, ile, phe, val, or met

<400> 41

Gly Gly Ile Ile Asn Thr Leu Gln Leu Tyr Tyr Cys Arg Val Arg Gly
 1 5 10 15
 Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Cys Ile Gly
 20 25 30
 Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys Lys
 35 40 45

<210> 42

<211> 45

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (42)...(42)

<223> Xaa is leu, ile, phe, val, or met

<400> 42

Gly Gly Ile Ile Asn Thr Leu Gln Leu Tyr Tyr Cys Arg Val Arg Gly
 1 5 10 15
 Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Cys Ile Gly

Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys
 35 40 45

<210> 43

<211> 45

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (41)...(41)

<223> Xaa is leu, ile, val, phe, or met

<400> 43

Gly Ile Ile Asn Thr Leu Gln Leu Tyr Tyr Cys Arg Val Arg Gly Gly
 1 5 10 15
 Arg Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Cys Ile Gly Lys
 20 25 30
 Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys Lys
 35 40 45

<210> 44

<211> 44

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (41)...(41)

<223> Xaa is leu, ile, phe, val, or met

<400> 44

Gly Ile Ile Asn Thr Leu Gln Leu Tyr Tyr Cys Arg Val Arg Gly Gly
 1 5 10 15
 Arg Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Cys Ile Gly Lys
 20 25 30
 Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys
 35 40

<210> 45
 <211> 44
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Defensin polypeptide

<221> VARIANT
 <222> (40)...(40)
 <223> Xaa is leu, ile, phe, val, met.

<400> 45
 Ile Ile Asn Thr Leu Gln Leu Tyr Tyr Cys Arg Val Arg Gly Gly Arg
 1 5 10 15
 Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Cys Ile Gly Lys Met
 20 25 30
 Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys Lys
 35 40

<210> 46
 <211> 43
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Defensin polypeptide

<221> VARIANT
 <222> (40)...(40)
 <223> Xaa is leu, ile, phe, val, or met

<400> 46
 Ile Ile Asn Thr Leu Gln Leu Tyr Tyr Cys Arg Val Arg Gly Gly Arg
 1 5 10 15
 Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Cys Ile Gly Lys Met
 20 25 30
 Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys
 35 40

<210> 47
 <211> 43

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (39)...(39)

<223> Xaa is leu, ile, val, phe, or met.

<400> 47

Ile	Asn	Thr	Leu	Gln	Leu	Tyr	Tyr	Cys	Arg	Val	Arg	Gly	Gly	Arg	Cys
1				5					10					15	
Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu	Cys	Ile	Gly	Lys	Met	Ser
			20					25					30		
Thr	Arg	Gly	Arg	Lys	Cys	Xaa	Arg	Arg	Lys	Lys					
			35				40								

<210> 48

<211> 42

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (39)...(39)

<223> Xaa is leu, ile, phe, val, or met

<400> 48

Ile	Asn	Thr	Leu	Gln	Leu	Tyr	Tyr	Cys	Arg	Val	Arg	Gly	Gly	Arg	Cys
1				5					10					15	
Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu	Cys	Ile	Gly	Lys	Met	Ser
			20					25					30		
Thr	Arg	Gly	Arg	Lys	Cys	Xaa	Arg	Arg	Lys						
			35				40								

<210> 49

<211> 42

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (38)...(38)

<223> Xaa is leu, ile, phe, val, or met

<400> 49

Asn	Thr	Leu	Gln	Leu	Tyr	Tyr	Cys	Arg	Val	Arg	Gly	Gly	Arg	Cys	Ala
1				5					10					15	
Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu	Cys	Ile	Gly	Lys	Met	Ser	Thr
			20				25						30		
Arg	Gly	Arg	Lys	Cys	Xaa	Arg	Arg	Lys	Lys						
			35				40								

<210> 50

<211> 41

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (38)...(38)

<223> Xaa is ile, leu, phe, val, or met

<400> 50

Asn	Thr	Leu	Gln	Leu	Tyr	Tyr	Cys	Arg	Val	Arg	Gly	Gly	Arg	Cys	Ala
1				5					10					15	
Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu	Cys	Ile	Gly	Lys	Met	Ser	Thr
			20				25						30		
Arg	Gly	Arg	Lys	Cys	Xaa	Arg	Arg	Lys							
			35				40								

<210> 51

<211> 41

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (37)...(37)

<223> Xaa is ile, leu, val, phe, or met

<400> 51

Thr	Leu	Gln	Leu	Tyr	Tyr	Cys	Arg	Val	Arg	Gly	Gly	Arg	Cys	Ala	Val
1			5					10					15		
Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu	Cys	Ile	Gly	Lys	Met	Ser	Thr	Arg
			20				25					30			
Gly	Arg	Lys	Cys	Xaa	Arg	Arg	Lys	Lys							
			35				40								

<210> 52

<211> 40

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (37)...(37)

<223> Xaa is met, leu, ile, val, or phe

<400> 52

Thr	Leu	Gln	Leu	Tyr	Tyr	Cys	Arg	Val	Arg	Gly	Gly	Arg	Cys	Ala	Val
1			5					10					15		
Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu	Cys	Ile	Gly	Lys	Met	Ser	Thr	Arg
			20				25					30			
Gly	Arg	Lys	Cys	Xaa	Arg	Arg	Lys								
			35				40								

<210> 53

<211> 40

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (36)...(36)

<223> Xaa is ile, leu, val, phe, or met

<400> 53

Leu	Gln	Leu	Tyr	Tyr	Cys	Arg	Val	Arg	Gly	Gly	Arg	Cys	Ala	Val	Leu
1				5					10					15	
Ser	Cys	Leu	Pro	Lys	Glu	Glu	Cys	Ile	Gly	Lys	Met	Ser	Thr	Arg	Gly
			20					25					30		
Arg	Lys	Cys	Xaa	Arg	Arg	Lys	Lys								
		35				40									

<210> 54

<211> 39

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (36)...(36)

<223> Xaa is leu, ile, met, phe, or val

<400> 54

Leu	Gln	Leu	Tyr	Tyr	Cys	Arg	Val	Arg	Gly	Gly	Arg	Cys	Ala	Val	Leu
1				5					10					15	
Ser	Cys	Leu	Pro	Lys	Glu	Glu	Cys	Ile	Gly	Lys	Met	Ser	Thr	Arg	Gly
			20					25					30		
Arg	Lys	Cys	Xaa	Arg	Arg	Lys									
		35													

<210> 55

<211> 39

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (35)...(35)

<223> Xaa is leu, val, ile, met, or phe

<400> 55

Gln	Leu	Tyr	Tyr	Cys	Arg	Val	Arg	Gly	Gly	Arg	Cys	Ala	Val	Leu	Ser
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

1 5 10 15
 Cys Leu Pro Lys Glu Glu Cys Ile Gly Lys Met Ser Thr Arg Gly Arg
 20 25 30
 Lys Cys Xaa Arg Arg Lys Lys
 35

<210> 56
 <211> 38
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Defensin polypeptide

<221> VARIANT
 <222> (35)...(35)
 <223> Xaa is ile, leu, val, phe, or met

<400> 56
 Gln Leu Tyr Tyr Cys Arg Val Arg Gly Gly Arg Cys Ala Val Leu Ser
 1 5 10 15
 Cys Leu Pro Lys Glu Glu Cys Ile Gly Lys Met Ser Thr Arg Gly Arg
 20 25 30
 Lys Cys Xaa Arg Arg Lys
 35

<210> 57
 <211> 38
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Defensin polypeptide

<221> VARIANT
 <222> (34)...(34)
 <223> Xaa is ile, leu, val, phe, or met

<400> 57
 Leu Tyr Tyr Cys Arg Val Arg Gly Gly Arg Cys Ala Val Leu Ser Cys
 1 5 10 15
 Leu Pro Lys Glu Glu Cys Ile Gly Lys Met Ser Thr Arg Gly Arg Lys
 20 25 30

Tyr Tyr Cys Arg Val Arg Gly Gly Arg Cys Ala Val Leu Ser Cys Leu
1 5 10 15
Pro Lys Glu Glu Cys Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys
20 25 30
Xaa Arg Arg Lys Lys
35

<210> 60
 <211> 36
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Defensin polypeptide

<221> VARIANT
 <222> (33)...(33)
 <223> Xaa is ile, leu, val, phe, or met

<400> 60
 Tyr Tyr Cys Arg Val Arg Gly Gly Arg Cys Ala Val Leu Ser Cys Leu
 1 5 10 15
 Pro Lys Glu Glu Cys Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys
 20 25 30
 Xaa Arg Arg Lys
 35

<210> 61
 <211> 36
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Defensin polypeptide

<221> VARIANT
 <222> (32)...(32)
 <223> Xaa is leu, ile, val, met, or phe

<400> 61
 Tyr Cys Arg Val Arg Gly Gly Arg Cys Ala Val Leu Ser Cys Leu Pro
 1 5 10 15
 Lys Glu Glu Cys Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa
 20 25 30
 Arg Arg Lys Lys
 35

<210> 62
 <211> 35
 <212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (32)...(32)

<223> Xaa is phe, val, ile, leu, or met

<400> 62

Tyr	Cys	Arg	Val	Arg	Gly	Gly	Arg	Cys	Ala	Val	Leu	Ser	Cys	Leu	Pro
1				5				10					15		
Lys	Glu	Glu	Cys	Ile	Gly	Lys	Met	Ser	Thr	Arg	Gly	Arg	Lys	Cys	Xaa
			20				25						30		
Arg	Arg	Lys													
		35													

<210> 63

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (31)...(31)

<223> Xaa is ile, leu, phe, val, or met

<400> 63

Cys	Arg	Val	Arg	Gly	Gly	Arg	Cys	Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys
1				5				10					15		
Glu	Glu	Cys	Ile	Gly	Lys	Met	Ser	Thr	Arg	Gly	Arg	Lys	Cys	Xaa	Arg
			20				25						30		
Arg	Lys	Lys													
		35													

<210> 64

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (31)...(31)

<223> Xaa is ile, leu, val, phe, or met

<400> 64

Cys	Arg	Val	Arg	Gly	Gly	Arg	Cys	Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys
1				5				10					15		
Glu	Glu	Cys	Ile	Gly	Lys	Met	Ser	Thr	Arg	Gly	Arg	Lys	Cys	Xaa	Arg
			20					25					30		
Arg Lys															

<210> 65

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (30)...(30)

<223> Xaa is ile, leu, val, phe, or met

<400> 65

Arg	Val	Arg	Gly	Gly	Arg	Cys	Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu
1				5				10					15		
Glu	Cys	Ile	Gly	Lys	Met	Ser	Thr	Arg	Gly	Arg	Lys	Cys	Xaa	Arg	Arg
			20					25					30		
Lys Lys															

<210> 66

<211> 33

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (30)...(30)

<223> Xaa is leu, ile, val, phe, or met

<400> 66

Arg	Val	Arg	Gly	Gly	Arg	Cys	Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu
1				5					10					15	
Glu	Cys	Ile	Gly	Lys	Met	Ser	Thr	Arg	Gly	Arg	Lys	Cys	Xaa	Arg	Arg
			20					25					30		

Lys

<210> 67

<211> 33

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (29)...(29)

<223> Xaa is ile, leu, val, phe, or met

<400> 67

Val	Arg	Gly	Gly	Arg	Cys	Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu
1				5				10						15	
Cys	Ile	Gly	Lys	Met	Ser	Thr	Arg	Gly	Arg	Lys	Cys	Xaa	Arg	Arg	Lys
			20					25				30			

Lys

<210> 68

<211> 32

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (29)...(29)

<223> Xaa is leu, ile, phe, val, or met

<400> 68

Val	Arg	Gly	Gly	Arg	Cys	Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu
1				5				10					15		
Cys	Ile	Gly	Lys	Met	Ser	Thr	Arg	Gly	Arg	Lys	Cys	Xaa	Arg	Arg	Lys
		20						25					30		

<210> 69

<211> 32

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (28)...(28)

<223> Xaa is ile, leu, phe, val, or met

<400> 69

Arg	Gly	Gly	Arg	Cys	Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu	Cys
1				5				10					15		
Ile	Gly	Lys	Met	Ser	Thr	Arg	Gly	Arg	Lys	Cys	Xaa	Arg	Arg	Lys	Lys
		20						25					30		

<210> 70

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Defensin polypeptide

<221> VARIANT

<222> (28)...(28)

<223> Xaa is leu, ile, met, val, or phe

<400> 70

Arg	Gly	Gly	Arg	Cys	Ala	Val	Leu	Ser	Cys	Leu	Pro	Lys	Glu	Glu	Cys
1				5				10					15		
Ile	Gly	Lys	Met	Ser	Thr	Arg	Gly	Arg	Lys	Cys	Xaa	Arg	Arg	Lys	
		20						25					30		

<210> 71

<211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Defensin polypeptide

<221> VARIANT
 <222> (27)...(27)
 <223> Xaa is ile. leu. met, phe, or val

<400> 71
 Gly Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Cys Ile
 1 5 10 15
 Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys Lys
 20 25 30

<210> 72
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Defensin polypeptide

<221> VARIANT
 <222> (27)...(27)
 <223> Xaa is leu, ile, phe, val, or met

<400> 72
 Gly Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Cys Ile
 1 5 10 15
 Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys
 20 25 30